

## CLAIMS

1. A process for purifying phenols in a feedstock containing phenols,  
5 neutral oils and/or tar bases comprising the steps of
- i) 10       subjecting the feedstock to liquid-liquid extraction using a solvent  
          in the form of a mixture of water and a solvent compound to  
          transfer the phenols into a solvent layer, and using a counter-  
          solvent to transfer the neutral oils and/or tar bases into a counter-  
          solvent layer;
  - ii)       separating the solvent and counter-solvent layers, which  
          separated solvent layer contains some counter-solvent;
  - 15       iii)   subjecting the separated solvent layer of step (ii) to distillation at  
          or above atmospheric pressure to yield a mixture comprising  
          recovered water and counter-solvent as an overheads product  
          and a mixture comprising the solvent compound and phenols as a  
          bottoms product; and
  - 20       iv)   recovering phenols from the bottoms product of step iii) to yield a  
          purified phenols product.
2. A process for purifying phenols from a feedstock containing phenols,  
neutral oils and/or tar bases comprising the steps of
- i)       subjecting the feedstock to liquid-liquid extraction using a solvent in  
          the form of mixture of water and a solvent compound to transfer the

- phenols into a solvent layer, and using an organic counter-solvent to transfer the neutral oils and/or tar bases into a counter-solvent layer;
- 5      ii)      separating the solvent and counter-solvent layers, the solvent layer optionally containing some counter-solvent;
- 10      iii)      subjecting the separated solvent layer of step ii) to distillation to yield a mixture comprising recovered water, some phenols and optionally some counter-solvent as an overheads product, and a mixture comprising the solvent compound and a major portion of the phenols as a bottoms product;
- 15      iv)      settling the overheads product of step iii) to form an aqueous phase and an organic phase and separating the phases from each other;
- 15      v)      recycling the organic phase of step iv) to the liquid-liquid extraction of step i); and
- 15      vi)      recovering the phenols from the bottoms product of step iii) to yield a purified phenols product.
3.      A process for purifying phenols from a feedstock containing phenols, neutral oils and/or tar bases comprising the steps of
- 20      i)      subjecting the feedstock to liquid-liquid extraction using a solvent compound to transfer the phenols into a solvent layer and using a counter-solvent to transfer the neutral oils and/or tar bases and some solvent compound into a counter-solvent layer;
- 20      ii)      separating the solvent and counter-solvent layers, which separated

counter-solvent layer contains some solvent compound;

iii) recovering the counter-solvent from the separated counter-solvent layer to yield recovered counter-solvent as well as a mixture of solvent compound and neutral oils and/or tar bases;

5 iv) separating the solvent compound from the neutral oils and/or tar bases from the mixture of solvent compound and neutral oils and/or tar bases obtained in step iii); and

v) recovering phenols from the separated solvent layer of step ii) to yield a purified phenols product.

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